# Wild and Spontaneous Fermentation

AHA National Homebrewers Conference 2015

# James Howat - Background

Homebrewer
B.S. in Microbiology
Former Biology Teacher
Brewery Owner / Brewmaster

# Brewery Projects

Former Future Brewing Company

Black Project Spontaneous & Wild Ales

# BLACK PROJECT

SPONTANEOUS & WILD ALES

# Wild Microbes

- What is “wild?”
- Many approaches, depending on your goals
  - Spontaneous Ale
  - Spontaneous Starter / Wild Ale
  - Isolation
  - Mixed-Method

# Spontaneous Ale

# Coolship

# / Koelschip

What is it?

# Home & Small Scale Coolships

Cooling rate & inoculation area

*Surface Area -vs- Volume*

# An Example

~36bbl Coolship Dimensions: 10ft x 10ft 1.5ft
Wort Volume = 1122gal / 150 cu. ft.
Open Surface Area = 100 sq. ft.

SA/V Ratio: 100/150=**0.67** **sq ft/cu ft**

# Good Intentions

A geometrically-scaled homebrew coolship:

Dimensions: 2.5ft x 2.5ft x .20ft (2.4in)
Volume: 9.35gal / 1.25cu ft
Open Surface Area: 6.25sq ft

SA/V Ratio: 6.25/1.25= **5 sq ft/cu ft**

# More Surface Area the Better?

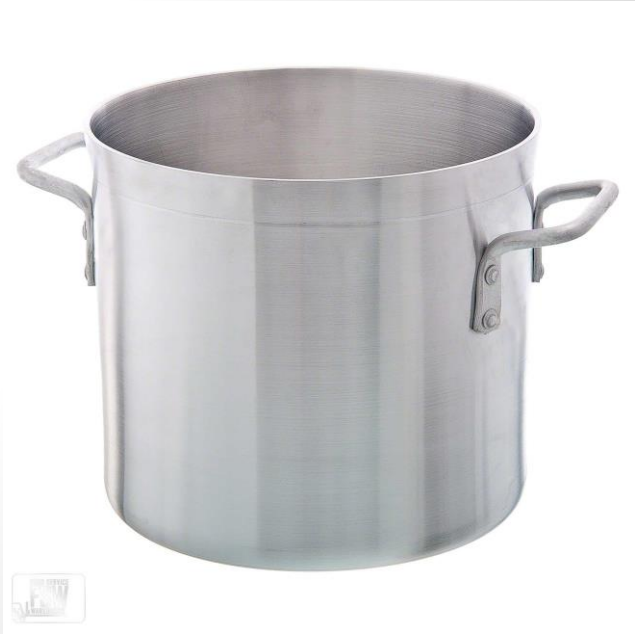
No, because surface area affects both cooling rate AND microbe collection.

Commercial coolships take 8-12 hrs to cool to room temperature.

# My Suggestion for Your Coolship

Try to get as close to a 0.67 sq ft/cu ft ratio as you can.

USE YOUR BOIL KETTLE!



# Other Considerations

Insects
Temperature Control
Location
Overnight Temperatures / Season
Starting pH - SAFETY FACTOR
Original Gravity
Water Adjustments

# “Spontaneous” Starter / Wild Ale

# Spontaneous Starter

250mL - 1+L in a flask or open-mouth container.

Set outside overnight / Surface Inoculation

Chance to “proof” your inoculation

# Spontaneous Ale Wort Composition

Gravity

Alpha Acids / IBUs

pH

Amylase Rest Temperature / Mash

# Care and Feeding of Spontaneous Ale

# DO

Keep carboy / barrel FULL

Keep airlock FULL

Have patience

Take samples

# DON’T

Break pellicle

Use small barrels (<30gal)

Panic

Be afraid to start over

# Isolation of Wild Yeast

# Isolation of Wild Microbes

Primarily looking for Brettanomyces or Saccharomyces

When to plate?

Equipment Needed

# Media

Pre-Poured Plates - YPD, MEA, **WLN**

DIY:
-30g/L Light DME
-15g/L Agar
-0.5-1.0mL/L 1%Bromocresol Green

# Things to Google

Aseptic Technique

Streak for Isolation

Serial Dilutions

# Stepping up from a Colony

10x increase starting from 25-50mL

Go bigger than you think you need

# Mixed-Methods

# Mix it up

Combine coolship with lab organisms, bottle dregs, DIY isolations

Use lab cultures to finish attenuation

Create a house culture blend / solera

Use mature sour beer

# Resources

Email me: james@blackprojectbeer.com

*A super awesome resource:*

**Milk the Funk**

Facebook Group / Website / Wiki

# Q & A